Complete Summary

GUIDELINE TITLE

Hospital guidelines for the use of supplementary feedings in the healthy term breastfed neonate, revised 2009.

BIBLIOGRAPHIC SOURCE(S)

Academy of Breastfeeding Medicine Protocol Committee. ABM clinical protocol #3: hospital guidelines for the use of supplementary feedings in the healthy term breastfed neonate, revised 2009. Breastfeed Med 2009 Sep;4(3):175-82. PubMed

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Academy of Breastfeeding Medicine. Hospital guidelines for the use of supplementary feedings in the healthy term breastfed neonate. New Rochelle (NY): Academy of Breastfeeding Medicine; 2002 Feb. 4 p.

Academy of Breastfeeding Medicine (ABM) protocols expire 5 years from the date of publication. Evidence-based revisions are made within 5 years or sooner if there are significant changes in the evidence.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Infant nutritional status and health

GUIDELINE CATEGORY

Counseling
Evaluation
Management

CLINICAL SPECIALTY

Family Practice
Nursing
Nutrition
Obstetrics and Gynecology
Pediatrics

INTENDED USERS

Advanced Practice Nurses
Dietitians
Hospitals
Nurses
Patients
Pharmacists
Physician Assistants
Physicians
Public Health Departments

GUIDELINE OBJECTIVE(S)

To provide clinical protocols for managing common medical problems that may impact breastfeeding success

TARGET POPULATION

Term healthy newborns and their mothers

INTERVENTIONS AND PRACTICES CONSIDERED

Counseling and Management

1. Antenatal education and in-hospital support
2. Hospitals should strongly consider instituting policy regarding supplemental feedings
3. All supplemental feedings should be documented, including the content, volume, method, and medical indication or reason
4. Formal evaluation of all infants prior to the provision of supplemental feedings
5. Choice of supplemental feeding
    - Expressed human milk
    - Pasteurized donor human milk
    - Protein hydrolysate formulas
    - Other supplemental fluids, such as standard formulas or soy formulas
6. Consider average reported intakes of colostrum by healthy breastfed infants
7. When selecting an alternative feeding method, clinicians should consider several criteria:

- Cost and availability
- Ease of use and cleaning
- Stress to the infant
- Adequate milk volume in 20-30 minutes
- Short- or long-term usage
- Maternal preference
- Development of breastfeeding skills

MAJOR OUTCOMES CONSIDERED

- Weight gain and growth in healthy term infants
- Percentage of weight loss in infants
- Breastfeeding duration and exclusivity

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

An initial search of relevant published articles written in English in the past 20 years in the fields of medicine, psychiatry, psychology, and basic biological science is undertaken for a particular topic. Once the articles are gathered, the papers are evaluated for scientific accuracy and significance.

NUMBER OF SOURCE DOCUMENTS

More than 100

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus (Committee)
Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

I Evidence obtained from at least one properly randomized controlled trial

II-1 Evidence obtained from well-designed controlled trials without randomization

II-2 Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group

II-3 Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of the

introduction of penicillin treatment in the 1940s) could also be regarded as this type of evidence.

III Opinions of respected authorities, based on clinical experience, descriptive studies and case reports; or reports of expert committees

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

An expert panel is identified and appointed to develop a draft protocol using evidence based methodology. An annotated bibliography (literature review), including salient gaps in the literature, are submitted by the expert panel to the Protocol Committee.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Draft protocol is peer reviewed by individuals outside of lead author/expert panel, including specific review for international applicability. Protocol Committee's sub-group of international experts recommends appropriate international reviewers. Chair (co-chairs) institutes and facilitates process. Reviews submitted to committee Chair (co-chairs).

Draft protocol is submitted to The Academy of Breastfeeding Medicine (ABM) Board for review and approval. Comments for revision will be accepted for three

weeks following submission. Chair (co-chairs) and protocol author(s) amends protocol as needed.

Following all revisions, protocol has final review by original author(s) to make final suggestions and ascertain whether to maintain lead authorship.

Final protocol is submitted to the Board of Directors of ABM for approval.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

1. Healthy infants should be put skin-to-skin with the mother immediately after birth to facilitate breastfeeding (Gartner et al., 2005; World Health Organization, 1998; Saadeh & Akre, 1996), because the delay in time between birth and initiation of the first breastfeed is a strong predictor of formula use (Kurinij & Shiono, 1991; Smale, 1998).
2. Antenatal education and in-hospital support can significantly improve rates of exclusive breastfeeding (Su et al., 2007). Both mothers and healthcare providers should be aware of the risks of unnecessary supplementation.
3. Healthy newborns do not need supplemental feedings for poor feeding for the first 24-48 hours, but babies who are too sick to breastfeed or whose mothers are too sick to allow breastfeeding are likely to require supplemental feedings (Powers & Slusser, 1997).
4. Hospitals should strongly consider instituting policy regarding supplemental feedings to require a physician's order when supplements are medically indicated and informed consent of the mother when supplements are not medically indicated. It is the responsibility of the health professional to provide information, document parental decisions, and support the mother after she has made the decision. (Henrikson, 1990) When the decision is not medically indicated, efforts to educate the mother ought to be documented by the nursing and/or medical staff.
5. All supplemental feedings should be documented, including the content, volume, method, and medical indication or reason.
6. If mother-baby separation is unavoidable, established milk supply is poor or questionable, or milk transfer is inadequate, the mother needs instruction and encouragement to pump or manually express her milk to stimulate production and provide expressed breast milk as necessary for the infant (Gartner et al., 2005; Powers & Slusser, 1997; World Health Organization, 1998; International Lactation Consultant Association, 2005).
7. When supplementary feeding is necessary, the primary goals are to feed the baby and also to optimize the maternal milk supply while determining the cause of poor feeding or inadequate milk transfer.
8. Whenever possible, it is ideal to have the mother and infant room-in 24 hours per day to enhance opportunities for breastfeeding and hence lactogenesis (Gartner et al., 2005; Powers & Slusser, 1997; World Health Organization, 1998; International Lactation Consultant Association, 2005).
9. Optimally, mothers need to express milk each time the baby receives a supplemental feeding, or about every 2-3 hours. Mothers should be encouraged to start expressing on the first day (within the first 24 hours) or as soon as possible. Maternal breast engorgement should be avoided as it will

further compromise the milk supply and may lead to other complications (Powers & Slusser, 1997; World Health Organization, 1998).

10. All infants must be formally evaluated for position, latch, and milk transfer prior to the provision of supplemental feedings (Gartner et al., 2005; International Lactation Consultant Association, 2005). Most babies who remain with their mothers and breastfeed adequately lose less than 7% of their birth weight. Weight loss in excess of 7% may be an indication of inadequate milk transfer or low milk production (Neifert, 2001). Although weight loss in the range of 8-10% may be within normal limits, if all else is going well and the physical exam is normal, it is an indication for careful assessment and possible breastfeeding assistance.
11. The infant's physician should be notified if:
    a. The infant exhibits other signs of illness in addition to poor feeding.
    b. The mother-infant dyad meets the clinical criteria in the table below.
    c. The infant's weight loss is greater than 7%.

Table: Indications for Supplemental Feeding in Term, Healthy Infants (Situations Where Breastfeeding is Not Possible)

1. Separation
    - Maternal illness resulting in separation of infant and mother (e.g., shock or psychosis)
    - Mother not at the same hospital
2. Infant with inborn error of metabolism (e.g., galactosemia)
3. Infant who is unable to feed at the breast (e.g., congenital malformation, illness)
4. Maternal medications (those contraindicated in breast feeding) (Committee on Drugs, The American Academy of Pediatrics, 2001)

Choice of Supplemental Feeding

1. Expressed human milk is the first choice for supplemental feeding, (Gartner et al., 2005; "Global Strategy," 2003) but sufficient colostrum in the first few days (0-72 hours) may not be available. The mother may need reassurance and education if such difficulties occur. Hand expression may elicit larger volumes than a pump in the first few days and may increase overall milk supply (Morton et al., "Early hand expression," 2007). Breast massage along with expressing with a mechanical pump may also increase available milk (Morton et al., "Breast massage," 2007).
2. If the volume of the mother's own colostrum does not meet her infant's feeding requirements, pasteurized donor human milk is preferable to other supplements. ("Global Strategy," 2003)
3. Protein hydrolysate formulas are preferable to standard artificial milks as they avoid exposure to cow's milk proteins, reduce bilirubin levels more rapidly (Gourley et al., 1999), and may convey the psychological message that the supplement is a temporary therapy, not a permanent inclusion of artificial feedings. Supplementation with glucose water is not appropriate.
4. The physician must weigh the potential risks and benefits of other supplemental fluids, such as standard formulas, soy formulas, or protein hydrolysate formula, with consideration given to available resources, the

family's history for risk factors such as atopy, the infant's age, the amounts needed, and the potential impact on the establishment of breastfeeding.

Volume of Supplemental Feeding

1. Infants fed artificial milks ad libitum commonly have higher intakes than breastfed infants (Dollberg, Lahav, & Mimouni, 2001). Acknowledging that ad libitum breastfeeding recapitulates evolutionary feeding and considering recent data on obesity in artificially fed infants, it can be concluded that such artificially fed infants may well be overfed.
2. As there is no definitive research available, the amount of supplement given should reflect the normal amounts of colostrum available, the size of the infant's stomach (which changes over time), and the age and size of the infant.
3. Based on the limited research available, suggested intakes for term healthy infants are given in the table below, although feeding should be by infant cue to satiation.

Table: Average Reported Intakes of Colostrum by Health Breastfed Infants (Saint, Smith, & Hartmann, 1984; Casey et al., 1986; Evans et al., 2003; Dollberg, Lahav, & Mimouni, 2001)

Time	Intake (mL/feed)
1st 24 hours	2-10
24-28 hours	5-15
48-72 hours	15-30
72-96 hours	30-60

Methods of Providing Supplementary Feedings

1. When supplementary feedings are needed there are many methods from which to choose: a supplemental nursing device at the breast, cup feeding, spoon or dropper feeding, finger-feeding, syringe feeding, or bottle feeding (Wight, 2001).
2. There is little evidence about the safety or efficacy of most alternative feeding methods and their effect on breastfeeding; however, when cleanliness is suboptimal, cup feeding is the recommended choice. ("Global Strategy," 2003) Cup feeding has been shown safe for both term and preterm infants and may help preserve breastfeeding duration among those who require multiple supplemental feedings (Howard et al., 1999; Howard et al., 2003; Kramer et al., 2001; Marinelli, Burke, & Dodd, 2001; Malhotra et al., 1999; Lang, Lawrence, & Orme, 1994).
3. Supplemental nursing systems have the advantage of supplying appropriate supplement while simultaneously stimulating the breast to produce more milk and reinforcing the infant's feeding at the breast. Unfortunately, most systems are awkward to use, difficult to clean, and expensive and require moderately complex learning (Wight, 2001). A simpler version, supplementing with a dropper or syringe while the infant is at breast, may be effective.

4. Bottle feeding is the most commonly used method of supplementation in more affluent regions of the world, but is of concern because of distinct differences in tongue and jaw movements, differences in flow, and long-term developmental concerns (Wight, 2001). Some experts have recommended a nipple with a wide base and slow flow to try to mimic breastfeeding, but no research has been done evaluating outcomes with different nipples.
5. An optimal supplemental feeding device has not yet been identified, and may vary from one infant to another. No method is without potential risk or benefit. (Wight, 2001; Cloherty et al., 2005)
6. When selecting an alternative feeding method, clinicians should consider several criteria:
    a. Cost and availability
    b. Ease of use and cleaning
    c. Stress to the infant
    d. Whether adequate milk volume can be fed in 20-30 minutes
    e. Whether anticipated use is short- or long-term
    f. Maternal preference
    g. Whether the method enhances development of breast-feeding skills

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- The most recent scientific evidence indicates that *exclusive breastfeeding* (only breastmilk, no food or water except vitamins and medications) for the first 6 months is associated with the greatest protection against major health problems for both mothers and infants.
- Breastfeeding management that optimizes infant feeding at the breast may make for a more satisfied infant AND allow the mother to get more rest.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

A central goal of The Academy of Breastfeeding Medicine is the development of clinical protocols for managing common medical problems that may impact breastfeeding success. These protocols serve only as guidelines for the care of breastfeeding mothers and infants and do not delineate an exclusive course of treatment or serve as standards of medical care. Variations in treatment may be appropriate according to the needs of an individual patient.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Foreign Language Translations

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Academy of Breastfeeding Medicine Protocol Committee. ABM clinical protocol #3: hospital guidelines for the use of supplementary feedings in the healthy term breastfed neonate, revised 2009. Breastfeed Med 2009 Sep;4(3):175-82. PubMed

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2002 Feb (revised 2009 Sep)

GUIDELINE DEVELOPER(S)

Academy of Breastfeeding Medicine - Professional Association

SOURCE(S) OF FUNDING

Academy of Breastfeeding Medicine

A grant from the Maternal and Child Health Bureau, US Department of Health and Human Services

GUIDELINE COMMITTEE

Academy of Breastfeeding Medicine Protocol Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Lead Authors: Nancy E. Wight, M.D., FABM, FAAP; Robert Cordes, M.D., FAAP

Protocol Committee: Caroline J. Chantry, M.D., FABM (Co-Chairperson); Cynthia R. Howard, M.D., MPH, FABM (Co-Chairperson); Ruth A. Lawrence, M.D., FABM; Kathleen A. Marinelli, M.D., FABM (Co-Chairperson); Nancy G. Powers, M.D., FABM; Maya Bunik, M.D., MSPH, FABM

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

None to report

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Academy of Breastfeeding Medicine. Hospital guidelines for the use of supplementary feedings in the healthy term breastfed neonate. New Rochelle (NY): Academy of Breastfeeding Medicine; 2002 Feb. 4 p.

Academy of Breastfeeding Medicine (ABM) protocols expire 5 years from the date of publication. Evidence-based revisions are made within 5 years or sooner if there are significant changes in the evidence.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the Academy of Breastfeeding Medicine Web site.

Print copies: Available from the Academy of Breastfeeding Medicine, 140 Huguenot Street, 3rd floor, New Rochelle, New York 10801.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Procedure for protocol development and approval. Academy of Breastfeeding Medicine. 2007 Mar. 2 p.

Print copies: Available from the Academy of Breastfeeding Medicine, 140 Huguenot Street, 3rd floor, New Rochelle, New York 10801.

AÂ Korean translation of the original guideline document is available from the Academy of Breastfeeding Medicine Web site.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI Institute on December 12, 2009. This NGC summary was updated by ECRI Institute on March 9, 2010. The updated information was verified by the guideline developer on April 21, 2010.

COPYRIGHT STATEMENT

DISCLAIMER

NGC DISCLAIMER

The National Guideline Clearinghouse™ (NGC) does not develop, produce, approve, or endorse the guidelines represented on this site.

All guidelines summarized by NGC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public or private organizations, other government agencies, health care organizations or plans, and similar entities.

Guidelines represented on the NGC Web site are submitted by guideline developers, and are screened solely to determine that they meet the NGC Inclusion Criteria which may be found at http://www.guideline.gov/about/inclusion.aspx .

NGC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or clinical efficacy or effectiveness of the clinical practice guidelines and related materials represented on this site. Moreover, the views and opinions of developers or authors of guidelines represented on this site do not necessarily state or reflect those of NGC, AHRQ, or its contractor ECRI Institute, and inclusion or hosting of guidelines in NGC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding guideline content are directed to contact the guideline developer.

Date Modified: 5/10/2010